

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION**

BRUCE RHYNE and JANICE
RHYNE,

Plaintiffs,

v.

UNITED STATES STEEL
CORPORATION, et al.,

Defendants.

Civil Action No.: 3:18-cv-00197

**THE SAVOGRAN COMPANY’S MEMORANDUM OF LAW IN SUPPORT OF MOTION
TO EXCLUDE THE TESTIMONY, OPINIONS AND REPORT OF PLAINTIFFS’
EXPERT DR. ROBERT HERRICK**

Defendant THE SAVOGRAN COMPANY (“Savogran”) respectfully moves this Honorable Court for an Order pursuant to Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), excluding the testimony, opinions, and report of Plaintiffs’ expert industrial hygienist Dr. Robert Herrick. To the extent consistent herewith, Savogran joins in and adopts those arguments of Safety Kleen, Inc. and U. S. Steel, Inc. made in their own separate and joint motion to exclude, some arguments of which are incorporated herein for completeness.

INTRODUCTION

Plaintiffs have disclosed and designated Dr. Robert F. Herrick as a testifying expert witness on the topic of Plaintiff Bruce Rhyne’s (“Plaintiff”s”) alleged exposure to benzene.¹ The Court

¹ Reference to Plaintiff in the singular refers to Plaintiff Bruce Rhyne, whose alleged exposure to benzene is the primary basis for all of Plaintiffs’ claims. Plaintiff Janice Rhyne’s loss of consortium claims are derivative.

should exclude the testimony of this proffered expert because Dr. Herrick's exposure opinions are based on speculation and insufficient data, are not the product of reliable methods, and Dr. Herrick did not reasonably apply the methods in this case.

BACKGROUND AND SUMMARY OF ARGUMENT

Dr. Herrick's role was to assess Plaintiff's total exposure to benzene, and the individual exposures attributable to many of the products at issue. Exhibit "A", Herrick Deposition Transcript ("Herrick Dep. Tr.") 12:5-9, 184:11-14. As to Savogran, Plaintiffs allege that Plaintiff was exposed to benzene contained in the Savogran product called "Kutzit" for periods of time at his home, as a student at Lincoln High School and an intern at a local automobile dealership ("Setzer's"), and at work at Duke Power, and that these exposures caused Plaintiff to develop acute myeloid leukemia ("AML"). *See* Compl., ¶19. Dr. Herrick was tasked with retroactively assessing Plaintiff's benzene exposures. Exhibit "A", Herrick Dep. Tr. 12:5-9, 184:11-14. In evaluating Plaintiff's exposure to benzene from Kutzit, Dr. Herrick arrived at opinions quantifying estimated exposures from Plaintiff's alleged use of Kutzit at home, at Setzer's, and at Duke Power. Exhibit "B", Herrick Report, Table 4, at p. 43. Dr. Herrick was not able to offer an opinion quantifying Plaintiff's exposure from his time at Lincoln High School. *Id.*

As to home use of Kutzit, Plaintiff allegedly used Kutzit to remove gaskets when working on family cars. In estimating Plaintiff's exposure from such work, Dr. Herrick assumed Plaintiff used Kutzit one third of the times he worked on the family cars. This assumption has no evidentiary support.

As to use at Setzer's, Plaintiff allegedly used Kutzit to remove gaskets from cars. In estimating Plaintiff's exposure from such work, Dr. Herrick assumed Plaintiff used Kutzit one hour per day one day per week. This assumption has no evidentiary support.

As to use at Duke Power, Plaintiff allegedly used Kutzit to remove gaskets. In estimating Plaintiff's exposure from such work, Dr. Herrick assumed Plaintiff used Kutzit for removing gaskets at Duke Power from 1985 to 1998. This assumption has no evidentiary support.

Dr. Herrick's methodology also includes multiple fatal defects. For example, when calculating exposures at Setzer's, Dr. Herrick assumed the air concentrations of benzene from Kutzit were exactly the same as those reported in the Young Study, which involved a product other than Kutzit and air samples collected in a two-car garage.

Further, Dr. Herrick was deposed on November 6, 2019. During his deposition, Dr. Herrick's opinions and conclusions were reviewed, resulting in a series of admissions and revelations. Dr. Herrick testified that his report contained a number of inaccuracies in calculations. Exhibit "A", Herrick Dep. Tr. 168:4-10; 168:20-169:12; 240:20-23; 260:8-11; 265:6-7; 344:25-345:6. Herrick misapplied the ART exposure model, which is inapplicable to individual exposure assessments and incapable of isolating exposures by product. *See* Exhibit "C", Jody Schinkel, et al., *Reliability of the Advanced REACH Tool (ART)*, Vol. 58, No.4, Ann. Occup. Hyg. 450, 451 (2014). *Compare* Exhibit "A", Herrick Dep. Tr. 344:25-345:6 with Exhibit "B", Herrick Report at p. 43. Finally, Dr. Herrick failed to validate his results (which were described as mere predictions) by making a comparison to real world data and related information. Exhibit "A", Herrick Dep. Tr. 255:12-17.

Dr. Herrick's opinions, accordingly, do not comply with the standards imposed by Federal Rule of Evidence 702 and *Daubert* and are subject to exclusion by this Court.

DAUBERT ADMISSIBILITY REQUIREMENTS

Expert testimony is only admissible if the proffered testimony satisfies Federal Rule of Evidence 702 and the standards enunciated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509

U.S. 579 (1993). Rule 702 provides that a proposed scientific expert may only testify if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. In *Daubert*, the Court clarified the role of the trial court as a gatekeeper to determine whether expert testimony is relevant and reliable, and provided four non-exclusive factors: (1) whether the theory or technique can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) in the case of a particular scientific technique, the known or potential rate of error; and (4) whether the theory or technique has been generally accepted. *Id.*, 509 U.S. at 593; *see also Kumho Tire Co., Ltd., et al. v. Carmichael, et al.*, 526 U.S. 137 (1999) (trial court must “make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field”); *Belville v. Ford Motor Co.*, 919 F.3d 224, 232 (4th Cir. 2019) (trial court must determine “whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue”).

While *Daubert* provided guidance on precluding experts with unreliable methodology, the trial court must also address the reliability of expert conclusions in light of the testimony of material witnesses, the apparent credibility of the expert, and the consistency of the purported opinions with the other known facts and circumstances of the action. Savogran hereby avails itself of this opportunity to test the reliability, credibility and ultimate admissibility of this proffered

expert witness at a time before trial. *See General Electric Company v. Joiner*, 522 U.S. 136, 146 (1997).

Importantly, the trial court's critical gatekeeping role "is especially sensitive in cases 'where the plaintiff claims that exposure to a toxic substance caused his injury, [because a] jury may blindly accept an expert's opinion that conforms with their underlying fears of toxic substances without carefully understanding or examining the basis for that opinion.'" *Whiting v. Bos. Edison Co.*, 891 F. Supp. 12, 24 (D. Mass. 1995) (quoting *O'Conner v. Commonwealth Edison Co.*, 807 F. Supp. 1376, 1391 (C.D.Ill.1992)).

Dr. Herrick's purported opinions lack the reliability required under Rule 702 and *Daubert*. As such, Dr. Herrick should be precluding from testifying about Plaintiff's alleged exposure to benzene attributable to Savogran.

ARGUMENT

I. DR. HERRICK'S EXPOSURE ASSESSMENT RELIES UPON SPECULATION

To be admissible, Dr. Herrick's testimony must be "based on sufficient facts or data." Fed. R. Evid. 702(b). Dr. Herrick's assessment of Plaintiff's alleged benzene exposures from Savogran's product Kutzit is inherently unreliable because Dr. Herrick's assumptions and conclusions are wholly speculative and are not based on any objective evidence in the record.

A. Dr. Herrick's Opinion Regarding Plaintiff's Exposure to Benzene From Use of Kutzit at Home is Based on Speculation.

Dr. Herrick accurately reports Plaintiff testified in deposition that he used Kutzit while working on cars with his father at home around ages 14-15 to remove gaskets. Exhibit "B", Herrick's Report, p. 4. Dr. Herrick endeavored to estimate Plaintiff's exposure to benzene from this work. Dr. Herrick's report reflects that he relied solely on Plaintiff's deposition testimony for

the facts surrounding Plaintiff's use of Kutzit on cars at home. Exhibit "B", Herrick's Report, p. 3-4, including footnotes ("fns."). Dr. Herrick concluded that Plaintiff worked on cars at home one day per month for 6-7 hours each time. Exhibit "B", Herrick's Report, p. 31. Dr. Herrick then assumed that Plaintiff used Kutzit one day in every three days that he worked on cars. Exhibit "B", Herrick's Report, p. 31. Dr. Herrick references all of the citations to Plaintiff's deposition testimony allegedly supporting the frequency of use of Kutzit at home on pages 4 and 15 of his Report. Exhibit "B", Herrick's Report, p. 4, fns. 36, 37 and 38; p. 15, fns. 175, 176, 177 and 178. None of the Plaintiff's referenced deposition testimony in Dr. Herrick's Report indicates that he used Kutzit one day for every three days for home use. There is no deposition testimony from Plaintiff wherein he identifies how frequently he used Kutzit at home.

When questioned repeatedly at deposition regarding the basis for concluding that Plaintiff used Kutzit one day for every three days of home use, Dr. Herrick repeatedly replied, without any foundation, that he estimated the frequency of use. Exhibit "A", Herrick Dep. Tr., 348:10-349:16. Although critical to his opinion as to home use exposure, the Plaintiff's deposition fails to support this opinion in any respect. Dr. Herrick's estimate of Plaintiff using Kutzit one day for every three days of home use is not an "estimate", it is pure speculation.

B. Dr. Herrick's Opinion Regarding Plaintiff's Exposure to Benzene From Use of Kutzit at Setzer's is Based on Speculation.

As to his exposure estimates from Plaintiff's high school internship with Setzer's, Dr. Herrick assumes that Plaintiff used Kutzit one hour per day, one day per week in 1974-75 – again, without any testimony support from Plaintiff, nor any other evidentiary support. In contrast, although Plaintiff testified that some days he might have worked all day on gaskets, other times not at all, he never testified it averaged out to one hour per week. Plaintiff did not testify regarding any overall estimated amount of time he used Kutzit per week, per month, or any other time period.

Dr. Herrick's calculations as to Setzer's include an additional critical baseless assumption. Dr. Herrick described in deposition his conclusion that Savogran used a formula for Kutzit until February 28, 1974 that contained up to 56% benzene ("pre-2/28/74 formula"), and that the formula after this point in time did not contain benzene, but did contain toluene, which he concludes would have contained 0.1% to 1% benzene ("post-2/28/74 formula"). Exhibit "A", Herrick Dep. Tr. 359:15-362:1. When calculating Plaintiff's exposure to benzene from Kutzit at Setzer's in 1974, Dr. Herrick makes the assumption that Plaintiff used the pre-2/28/74 formula throughout 1974. Exhibit "A", Herrick Dep. Tr. 360:25-362:23. Dr. Herrick admitted in deposition he had no information regarding which formula of Kutzit (pre-2/28/74 or post-02/28/74) Plaintiff used in 1974. Exhibit "A", Herrick Dep. Tr. 360:25-362:23. Of course, rather than erring on the side of conservatism, Dr. Herrick chose the pre-2/28/74 formula to use in his calculations, which led to a much greater exposure calculation. Dr. Herrick's calculation of exposure at Setzer's is therefore based on speculation and is exaggerated and, therefore, unreliable.

C. **Dr. Herrick's Opinion Regarding Plaintiff's Exposure to Benzene From Use of Kutzit at Duke Power is Based on Speculation.**

Plaintiff allegedly used Kutzit at Duke Power to remove gaskets. In estimating Plaintiff's exposure from such work, Dr. Herrick assumed Plaintiff used Kutzit for removing gaskets at Duke Power from 1985 to 1998. Exhibit "B", Herrick's Report, at p. 35. This assumption has no evidentiary support.

Dr. Herrick references no deposition testimony from Plaintiff, wherein he testified that he used Kutzit at Duke Power from 1985 to 1998. Although Plaintiff did testify that he began using Kutzit at Duke Power in 1985, he did not testify how long he continued to use Kutzit while at Duke Power. In fact, Plaintiff testified that he could not recall when he last used Kutzit at Duke Power, and twice stated that it would have been before 1998. Exhibit "D", Plaintiff Dep. Tr., 665:10-

665:24. Nevertheless, Dr. Herrick calculated Plaintiff's exposure assuming Plaintiff used Kutzit at Duke Power from 1985-1998. Dr. Herrick assumed critical facts in his exposure assessment that are directly contrary to the evidence, and that resulted in a lengthier exposure period and, thus, an exaggerated exposure estimate. Dr. Herrick's calculation of exposure at Duke Power is therefore based on speculation and is not reliable.

II. DR. HERRICK FAILS TO USE RELIABLE METHODOLOGY

A. Dr. Herrick's Method for Calculating Exposures Based on the Young Study is Not Reliable.

In calculating estimated exposures for Plaintiff's use of Kutzit at Setzer's and at Duke Power, Dr. Herrick relies exclusively upon the Young Study to determine the air concentration for benzene from Kutzit. Exhibit "E", Young Study.² As indicated in Herrick's Report, "in a 1978 investigation, Young et al. reported a series of 5-minute air samples ranging from 73 to 225 ppm benzene (average 130 ppm for the 25 minute period) when a Kutzit formula containing 52% benzene by volume was used for paint stripping. These samples were taken in a two-car garage with an overhead door that was opened intermittently." Exhibit "B", Herrick's Report at p. 18. Dr. Herrick then uses the average of 130 ppm reported in Young and assumes that Plaintiff's average exposure at Setzer's while using Kutzit would have been 130 ppm. Dr. Herrick's assumption that Plaintiff's exposures at Setzer's would have been exactly the same as those reported in Young is pure speculation and without any proof to support reliability.

First, although Dr. Herrick indicates that the Young Study used "a Kutzit formula", nothing in the Young Study indicates a Kutzit product or formula was used. Second, the Young Study was conducted in a two car garage measuring approximately 8 feet x 21 feet x 20 feet. Exhibit "E",

² Young R.I., Rinsky RA, and Infante PF. 1978. Benzene in Consumer Products. *Science*, 199:248-248.

Young Study. There is no reason to believe that the size of Plaintiff's workspace at Setzer's was anywhere close to a two car garage. In fact, Dr. Herrick did not take into account at all the size of Plaintiff's work area at Setzer's. Third, the sampling in the Young Study consisted of five 5-minute air samples. Based on that shallow depth of data, Dr. Herrick concluded that Plaintiff's exposure for two years at Setzer's would have been the exact same as in the Young Study. Dr. Herrick offers no support that employing this type of methodology is generally accepted in the scientific community.

For Duke Power, Dr. Herrick's methodology is even more flawed than employed for Setzer's. Plaintiff's testimony was that he began using Kutzit at Duke Power in 1985, which means that Plaintiff was using the post-2/28/74 formula containing toluene instead of benzene. Dr. Herrick assumed the benzene concentrations from toluene in the post-2/28/74 formula were 0.025%-0.5%. Exhibit "B", Herrick's Report at p. 36. Dr. Herrick then simply took the 130 ppm Young exposure average and reduced it in proportion to the lower amount of his estimate of benzene in the post-2/28/74 formula vs. the pre-2/28/74 formula, which results in a reduction from average air exposures of 130 ppm to 0.65 ppm. Exhibit "B", Herrick's Report at p. 36. Dr. Herrick provides no basis for showing that it is generally accepted in the scientific community to employ such a methodology, which piles one assumption upon another.

B. Dr. Herrick Uses A Scientifically Invalid Exposure Model.

To be considered reliable, the methodology (in this instance, the scientific model) used by an expert must be relevant and fit the facts of the case. *See Burst v. Shell Oil Co.*, 104 F. Supp. 3d 773, 778 (E.D. La. 2015) (excluding plaintiff's industrial hygienist). To that end, the *Daubert* "fit" test considers "whether expert testimony proffered in the case is sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute." *Daubert*, 509 U.S. at 591; *Viva*

Healthcare Packaging USA Inc. v. CTL Packaging USA Inc., 197 F. Supp. 3d 837, 846 (W.D.N.C. 2016) (quoting *Daubert* 509 U.S. at 591). The test acknowledges that “scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.” *Viva Healthcare Packaging USA Inc.*, 197 F. Supp. 3d at 846.

As to his exposure opinions regarding Kutzit, Dr. Herrick relies in large part on the Advanced REACH Tool (“ART”) for his retrospective exposure analysis of Plaintiff’s work on cars at home. Exhibit “B”, Herrick Report at p. 18-19. The ART model, while valid for certain purposes and uses, is not scientifically valid for the purpose for which Dr. Herrick attempts to deploy it.³

The ART model is an evolving online exposure model accessible at <https://www.advancedreachtool.com>. The model’s website provides links to a number of articles that explain the purpose, scope, intent, and intended use of the ART model. Specifically, the ART model was developed to perform occupational exposure assessments to fulfill European Union legal requirements pursuant to the Regulation, Evaluation, Authorization, and Restriction of Chemicals (“REACH”) initiative that makes European industry responsible for assessing and managing the risk posed by chemicals. See Exhibit “F”, Kevin McNally, et al., *Advanced REACH Tool: A Bayesian Model for Occupational Exposure Assessment*, Vol. 58, No.5, Ann. Occup. Hyg. 551, 551-52 (2014); see also Exhibit “C”, Jody Schinkel, et al., *Reliability of the Advanced REACH Tool (ART)*, Vol. 58, No.4, Ann. Occup. Hyg. 450, 451 (2014).

REACH compliance requires the occupational analysis of thousands of exposure scenarios, which is impractical to do on a case-by-case basis. See Exhibit “F”, McNally, *supra* at 552. The

³ Even though Dr. Herrick did not use the ART model for his assessment of exposure to Kutzit at Setzer’s or Duke Power, the use of it for other products and for Kutzit at home use necessarily skews and renders unreliable his overall assessment of a cumulative dose. The proposition “garbage in, garbage out” applies.

ART model was developed as a means of estimating “exposure levels for specific scenarios for groups of workers that share operational conditions and risk management measures across different workplaces in Europe.” *See* Exhibit “C”, Schinkel, *supra* at 451; Exhibit “A”, Herrick Dep. Tr. 86:3-7.

ART is not a tool for an individual retrospective exposure analysis, in particular in an individual nuclear facility in the United States. *See* Exhibit “G”, Antti Joonas Koivisto, *Source specific exposure and risk assessment for indoor aerosols*, 668 Science of the Total Environment 13, 16 (2019) (concluding that “[p]roperly applied physical mass-balance models appear to be stronger tools for case-specific exposure assessments” than the use of empirical models such as ART).

Dr. Herrick does not dispute that the ART model was developed to assist with REACH compliance. Exhibit “A”, Herrick Dep. Tr. 86: 3-7. Notably, Dr. Herrick conceded at deposition that he could not find a scenario in the ART database that was comparable to Mr. Rhyne’s alleged exposures at a nuclear facility to conduct his exposure assessment. Exhibit “A”, Herrick Dep. Tr. 107:14-108:11. In other words, the website for the ART model and the scientific authorities referenced therein all note that ART has a highly particularized and specific utility. *See* Exhibit “C”, Schinkel, *supra* at 451. There is no basis to allow him to provide opinions based on his improper use of ART to the jury.

While the ART model is an evolving method for the European industrial sector to comply with the European Union’s regulatory requirements under REACH, it was not developed or calibrated to perform individual retrospective analyses of benzene exposures in a United States power plant. *Daubert* makes clear that while a method may be scientifically valid for one purpose, it is inadmissible when used for another unrelated purpose. *See* 509 U.S. at 591; *see also* *Garlinger*

v. Hardee's Food Sys., Inc., 16 F. App'x 232, 236 (4th Cir. 2001) (affirming exclusion of plaintiff's expert because while his testimony, "may have scientific validity in some cases, it does not "fit" this case."). Dr. Herrick's use of ART is improper and must be excluded.

C. **ART Lacks Widespread Acceptance For Modeling Individual Retrospective Exposure Assessments.**

Where, as here, an expert relies on a methodology that is not designed for the purpose for which the expert deploys it, "[w]idespread acceptance can be an important factor" in evaluating the method; indeed, "a known technique which has been able to attract only minimal support with the community may properly be viewed with skepticism." *Nease v. Ford Motor Co.*, 848 F.3d 219, 229 (4th Cir. 2017) (quoting *Daubert*, 509 U.S. at 594).

To that end, Dr. Herrick relies on a single study to support his use of the ART model. Exhibit "A", Herrick Dep. Tr. 165:6-13, 255:18-21, 341:3-18; *see also* Exhibit "B", Herrick Report at p. 26. (citing Exhibit "H", Mallory LeBlanc, et al., *Comparison of the near field/far field model and the advanced reach tool (ART) model V1.5: exposure estimates to benzene during parts washing with mineral spirits*, 221 Int'l J. of Hygiene and Env'tl. Health 231 (2018)). Dr. Herrick's single study clearly demonstrates that the ART model does not enjoy widespread use. Indeed, the study is clear: "[t]o our knowledge, this study is the first application of the ART to worker exposures to vapors emitted from low concentrations of a solvent/contaminant in a common solvent, e.g., benzene in mineral spirits. . . ." Exhibit "H", LeBlanc, *supra*, at 235. By definition, "first application" cannot equate to widespread acceptance. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 773 (3d Cir. 1994) (excluding expert testimony that rested on novel scientific methodology); *see also McCulloch v. H.B. Fuller Co.*, 61 F.3d 1038, 1042 (2d Cir. 1995) ("Thorny problems of admissibility arise when an expert seeks to base his opinion on novel or unorthodox techniques that have yet to stand the tests of time to prove their validity.").

Moreover, the ART model is not generally accepted in the relevant scientific community for individual retrospective exposure assessment and should therefore be rejected as unreliable. *See Belville v. Ford Motor Co.*, 919 F.3d at 229, 233 (affirming exclusion of expert and explaining that general acceptance is relevant to the reliability inquiry of an expert's methodology); *see also Moore v. Ashland Chem. Inc.*, 151 F.3d 269, 279 (5th Cir. 1998) (affirming exclusion of plaintiff's expert in part because his theory had not been generally accepted in the scientific community).

Dr. Herrick cannot credibly claim that his use of the ART model to measure Mr. Rhyne's individual benzene exposure has garnered widespread acceptance among industrial hygienists when the scientific literature he relies on is clear that ART does not enjoy such acceptance, *see* Exhibit "H", LeBlanc, *supra* at 235, and even when used for its intended purpose, the ART model is still evolving and simply "a good starting point for further development," *see* Exhibit "I", Erik Tielemans, et al., *Advanced REACH Tool (ART): Overview of Version 1.0 and Research Needs*, Vol. 55, No.9 Ann. Occup. Hyg. 949, 956 (2011).

III. DR. HERRICK'S EXPOSURE ASSESSMENT LACKS VALID DATA AND INTELLECTUAL RIGOR

In order to testify on a complex scientific issue, in particular in a toxic exposure case, a testifying expert must demonstrate "the same level of intellectual rigor that characterizes the practice of an expert in his field." *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. at 152. Dr. Herrick's report reflects a litany of failures that preclude any reasonable argument that his report and opinion reflect the intellectual rigor of a professional industrial hygienist.

Dr. Herrick's assessment of Plaintiff's alleged benzene exposures is inherently unreliable because Dr. Herrick ignored relevant exposures, relied on non-existent exposures, ignored relevant benzene testing data produced in discovery, relied on an inapplicable European testing model, entered speculative data into the model, and failed to validate his results. Dr. Herrick has failed to

demonstrate “the same level of intellectual rigor that characterizes the practice of an expert in his field” and must therefore be excluded.

A. Dr. Herrick Includes Unsubstantiated Exposures.

To be reliable, Dr. Herrick’s testimony “must be based on scientific, technical, or other specialized knowledge and not on belief or speculation, and inferences must be derived using scientific or other valid methods.” *Belville v. Ford Motor Co.*, 919 F.3d 224, 232–33 (4th Cir. 2019) (citing *Oglesby v. Gen. Motors Corp.*, 190 F.3d 244, 250 (4th Cir. 1999)). Further, “[a]ny step [in methodology or reasoning] that renders the analysis unreliable ... renders the expert’s testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.” *In re Paoli Yard PCB Litigation*, 35 F.3d at 745.

Part of Dr. Herrick’s retention was to identify Plaintiff’s cumulative exposure to benzene. Exhibit “A”, Herrick Dep. Tr. 73:24-74:6; *see also* Exhibit “B”, Herrick Report at p. 44. To do so, Dr. Herrick was obligated to rely on data that is itself reliable. *See Burst*, 104 F. Supp. 3d at 786 (E.D. La. 2015) (excluding plaintiff’s industrial hygienists and explaining that when an expert relies on invalid or non-existent data, his results are inevitably unreliable); *see also Castellow v. Chevron USA*, 97 F. Supp. 2d 780, 792 (S.D. Tex. 2000) (excluding plaintiff’s industrial hygienist for relying on inadequate data).

Instead, Dr. Herrick’s cumulative benzene exposure calculation assumed and included exposures to CRC 3-36 (a benzene-containing product manufactured by former Defendant CRC), even though Dr. Herrick admitted at deposition that he had no way of identifying what CRC product Mr. Rhyne used. Exhibit “A”, Herrick Dep. Tr. 25:16-26:8.

Indeed, Dr. Herrick’s baseless inclusion of CRC’s benzene-containing product is all the more alarming in light of the Court’s subsequent decision granting CRC’s motion for summary

judgment on the basis that “Plaintiffs have failed to come forward with sufficient evidence that the CRC Industries product used by Mr. Rhyne was CRC 3-36, as opposed to another CRC Industries product that did not contain benzene.” *See* ECF 180 at 8.

Dr. Herrick supported his decision to assume that Plaintiff was exposed to CRC 3-36 because of an April 1992 approved chemicals list that included CRC 3-36. Exhibit “A”, Herrick Dep. Tr. 24:8-19. Yet Dr. Herrick admitted at deposition that the list does not identify the product(s) Plaintiff may have used:

Q. How did this entry on this list [the April 1992 approved chemical list for McGuire facility] on this page tell you that he actually used that product?

A. Oh, I see. Well, it’s – it doesn’t really.

Exhibit “A”, Herrick Dep. Tr. 26:5-8. In granting CRC’s motion for summary judgment, the Court came to the same correct conclusion: the “inclusion of CRC 3-36 on the April 1992 approved chemical list for the McGuire facility is insufficient evidence that Mr. Rhyne used CRC 3-36 to create a genuine dispute of material fact.” *See* ECF 180 at 7. By including benzene exposures to a product for which there is no evidence of exposure into his cumulative assessment, Dr. Herrick artificially inflated Plaintiff’s total alleged benzene exposure.

B. Dr. Herrick Ignored Relevant and Reliable Real World Data For No Discernible Reason In Favor Of Irrelevant Data.

In analyzing Plaintiff’s exposure to Safety-Kleen 105 Solvent, Dr. Herrick assumed the concentration of benzene in the solvent was 58 parts per million (“ppm”). Exhibit “A”, Herrick Dep. Tr. 217:17-19; *see also* Exhibit “B”, Herrick Report at p. 26. Dr. Herrick’s decision to use the figure of 58 ppm arises from Fedoruk et al., *Benzene Exposure Assessment for Use of a Mineral Spirits-Based Degreaser*, 18 Applied Occup. and Env’tl. Hygiene 764, 771 (2003) (the “Fedoruk Study”, Exhibit “J”). The study in question, however, is not representative of the solvent in the ordinary course. In the Fedoruk Study, the solvent’s benzene level was intentionally manipulated,

by “spiking” the solvent with approximately 50 ppm of pure benzene to get it to 58 ppm. *See id.* at 768-69 (“**Study 2** [Dr. Herrick rejected Study 1 because the benzene content (9 ppm) was too low in his opinion, Exhibit “A”, Herrick Dep. Tr. 328:10-20] involved spiking the product to a target benzene concentration of approximately 50 ppm greater than the standard amount present in recycled solvent.”; Exhibit “A”, Herrick Dep. Tr. 217:17-218:1. Subsequent to this specific and intentional manipulation of the unnamed solvent, the researchers conducted air monitoring for one hour and noted that after just five hours of use, the benzene concentration (58 ppm) had halved, and after 16 hours it had been reduced by an order of magnitude. Exhibit “J”, Fedoruk, *supra* at 771. In other words, the study evaluated the substantial reduction in benzene concentration when the solvent was manipulated with an overload of pure benzene; the study did not attempt to or purport to analyze the measurements of benzene in the ordinary course usage of solvent, for individuals using solvent in the manner described by Plaintiff at deposition. *See id.* at 768-69.

At deposition, Dr. Herrick was questioned about his decision to rely on the Fedoruk Study. Specifically, he was asked whether the 58 parts per million is “in any way based on evidence that’s been produced in this case?” Dr. Herrick responded, “[w]ell, yeah, in terms of, you know, what was really available about the mineral spirits that were used in these power plants, you know, I didn’t really have any direct analysis or -- or specific information, you know, that would let me try to hone in on that.” Exhibit “A”, Herrick Dep. Tr. 324:8-19.

Of course, this statement is not entirely accurate. First, Dr. Herrick’s report states that he had testing data from 1980 on Safety-Kleen solvent showing a benzene concentration of 32.7 ppm. Exhibit “B”, Herrick Report at p. 24 (citing 1980 testing data on Safety-Kleen 105 Solvent from Gulf Coast Laboratories, Inc. [cited by Dr. Herrick as “Documents Produced SAL SK 7306-7367]”). However, he fails to explain why he ignored this data. *See id.* at 24-27. Second, Safety-

Kleen produced quarterly testing data of the benzene content of its 105 Solvent during the relevant timeframe and from the Lexington, South Carolina facility that provided the 105 Solvent allegedly used by Plaintiff. Exhibit “K”, SKS-RHYNE-001106-09, 003209-32. These documents demonstrate that the average benzene content in 105 Solvent at the Lexington, South Carolina facility from 1992-92 was 32.1 ppm. Exhibit “K”, SKS-RHYNE-001106-09. In 1994, that number dropped to 22.5 ppm in the first quarter, and 15.6 ppm in the fourth. Exhibit “K”, SKS-RHYNE-003209-32. In other words, for just the period of 1992-1994, real world testing produced by Safety-Kleen in this action shows that the figure relied on by Dr. Herrick was inflated anywhere from 157% (22.5 to 58 ppm) to as much as 271% (15.6 to 58 ppm).

Dr. Herrick admitted at deposition that “the quality of the information you put in you know, clearly does determine the – quality of the output.” Exhibit “A”, Herrick Dep. Tr. 101:12-14. Nevertheless, Dr. Herrick ignored (or did not seek) real-world testing data on the concentration of benzene in Safety-Kleen 105 Solvent, produced in discovery in this case, in favor of a single study in which the researchers intentionally “spiked” the solvent with pure benzene. Exhibit “A”, Herrick Dep. Tr. 217:17-218:1. This inaccurate and improper data requires exclusion; where “the ‘data’ from which his modeling assumptions arise is invalid, or non-existent, then there is no hope that his technique, much less his results, is going to be reliable.” *Castellow*, 97 F. Supp. 2d at 792.

Safety-Kleen also produced a 1995 industrial hygiene product risk evaluation performed on its 105 Solvent by the National Medical Advisory Service (“NMAS”), in which personal air sampling was taken at industrial facilities for workers using Safety-Kleen parts washers with 105 Solvent. Exhibit “K”, SKS-RHYNE-001236-001847. Despite having access to this information, Dr. Herrick testified:

A. ...in other cases where I've had, like, detailed reports about industrial hygiene measurements, for example, that people made, you know, that kind of helped shed light on the – the levels of exposure that people had....

Q. Did you ask for any of that in this case?

A. No I didn't, so –

Q. Why not?

A. Well that's a good question. I mean, it could have been useful. I mean, I had the impression that they didn't have, you know, a lot of air sampling and industrial hygiene measurements, for example.

Exhibit "A", Herrick Dep. Tr. 187:14-188:7. In other words, Dr. Herrick did not even know if this information existed, because he simply opted not to ask for it. That is unfortunate, because NMAS data would have demonstrated, yet again, that Dr. Herrick's calculations were meaningfully flawed. The NMAS data showed that not only were all of the personal 8-hour time-weighted-average ("TWA") results for benzene exposure well below the acceptable exposure limit of 0.1 ppm, but the mean 8-hour TWA was only 0.008 ppm. Exhibit "K", SKS-RHYNE-001313. This data was measured during periods of 143 minutes of Safety-Kleen parts washer use in industrial facilities. *Id.* In contrast, Dr. Herrick's ART model calculations for Plaintiff's exposures at Duke Power, for a period of only 60 minutes of use, produced a mean 8-hour TWA of 0.2 ppm, which is more than 25 times greater than real-world data taken in NMAS. Exhibit "B", Herrick Report at p. 37. Further, his ART calculations for a period of three hours of use produced a mean 8-hour TWA of 8.2 ppm, which is more than 100 times greater than the NMAS data. Exhibit "B", Herrick Report at p. 35. These wide discrepancies speak to the inapplicability of the ART model for individual retrospective exposure assessments and the problems with Dr. Herrick's reliance on a benzene concentration of 58 ppm based on the Fedoruk (2003) study, which explicitly stated it "involved spiking the product to a target benzene concentration of approximately 50 ppm greater than the standard amount present in recycled solvent." Exhibit "J", Fedoruk, *supra*, at 768-69.

Dr. Herrick failed to account for or even discuss this testing, which directly contradicts the data he relied on, thus rendering his methodology unreliable. *See Yates v. Ford Motor Co.*, 113 F. Supp. 3d 841, 858 (E.D.N.C. 2015) (“An expert’s opinion may be unreliable if he fails to account for contrary scientific literature and instead selectively chooses his support from the scientific landscape.”); *In re Zolof (Sertraline Hydrochloride) Prod. Liab. Litig.*, 26 F. Supp. 3d 449, 460-61 (E.D. Pa. 2014) (holding expert’s methodology unreliable because she selectively discussed studies most supportive of her conclusions and failed to account for contrary evidence).

Dr. Herrick’s assumptions related to benzene content in 105 Solvent impacted his cumulative benzene exposure opinions to the detriment of all Defendants, including Savogran. These opinions are, at best, speculative – and thus inadmissible. *See Tyger Const. Co. Inc. v. Pensacola Const. Co.*, 29 F.3d 137, 142 (4th Cir. 1994) (“An expert’s opinion should be excluded when it is based on assumptions which are speculative and are not supported by the record.”).

C. Dr. Herrick’s Implementation Of The ART Model Is Scientifically Invalid And Unreliable.

Misapplication of the model that an expert uses mandates exclusion of expert testimony. *See Burst*, 104 F. Supp. 3d at 786; *see also Castellow*, 97 F.Supp.2d at 792.

Even assuming, *arguendo*, that Dr. Herrick’s selection of the ART model was appropriate (and, as discussed previously, the ART model is completely inappropriate for calculating Plaintiff’s cumulative benzene exposure), Dr. Herrick’s application of the ART model independently undermines the admissibility of his opinions. Dr. Herrick *twice* fails to properly utilize the ART model: (1) he selects the wrong criteria, at least in part because he does not know how to use the ART model; and (2) he combines two independent factors that must be independently analyzed.

The ART model presents users with a series of selections to make for the scenario being analyzed. Exhibit “H”, LeBlanc, *supra* at 232-33. One of these selections, perhaps the most important, is the agent used. *See id.* at 233. For this critical step (relative to 105 Solvent, a mineral spirit), Dr. Herrick had the choice to select mineral spirits or benzene. Exhibit “A”, Herrick Dep. Tr. 229:21-230:8. When analyzing mineral spirits products like Safety-Kleen and Varsol, Dr. Herrick selected benzene instead of mineral spirits:

Q. Can you use ART to calculate exposure in mineral spirits?

A. It turns out you can, yeah. You know, I didn’t realize that until fairly recently that you could, you know, dial that in as a mixture.

Q. Could you have done that in this case – and done a calculation?

A. You – I mean, the – the short answer is yes – you know, with the caveat that, you know, as I’m sure you know, there’s a wide range of values for the vapor pressure of mineral spirits.

Exhibit “A”, Herrick Dep. Tr. 229:21-230:8. Dr. Herrick’s choice is all the more concerning in light of his explicit acknowledgement of the vast difference in benzene content between mineral spirits and benzene. *See id.* at 267:15-18 (“...if I compared, say, mineral spirits with pure benzene, there’s no doubt that there’s less benzene exposure associated with that mineral spirits.”). Dr. Herrick provides no explanation for selecting benzene rather than mineral spirits when analyzing mineral spirits, except his apparent lack of awareness of the ability to select mineral spirits as the agent. *See id.* at 229:21-230:8. This failure to understand and scientifically apply the exposure modeling (that is incorrect in any event, as discussed previously) mandates exclusion of Dr. Herrick’s testimony regarding cumulative exposures. *See In re TMI Litig.*, 193 F.3d 613, 695 (3d Cir. 1999) (affirming exclusion of expert for misapplication of methodology for running formula without relevant coefficient).

Dr. Herrick's second substantive failure in applying the ART model is his failure to independently calculate near-field (benzene exposure to the product in use by Plaintiff) and far-field (benzene exposure to products being used around Plaintiff) exposures. Exhibit "B", Herrick Dep. Tr. 238:22-25 ("Q. You don't know how much of that is attributed to near field and far field? A. No, you can't tell just, you know from these results [the results in his report]."), 343:9-345:6. In fact, Dr. Herrick combines these two exposures into a single figure, without determining what percentage of that number each field represents. *See id.* at 238:8-15, 343:9-345:6. This is significant because by factoring in far-field exposures (without a way to isolate them later), Dr. Herrick augments the benzene exposure from the individual product in use (near-field), making it impossible to know the true level of benzene exposure from a Defendant's product. Exhibit "A", Herrick Dep. Tr. 342:8-343:8. When confronted on this point, Dr. Herrick claimed he "wasn't really trying to do the calculation in a way that attributed something uniquely to that product." *See id.* at 344:3-5. Despite that statement, Dr. Herrick's report very clearly purports to attribute individual exposure numbers to each product. Exhibit "B", Herrick Report at p. 39 ("Table 3 Daily Average Benzene Exposure by Product and Facility"), 43 ("Table 4 Cumulative Benzene Exposure by Product and Facility."). In fact, his "Exposure Assessment," stretching from pages 17-39 of his report, is largely a product-by-product breakdown of Mr. Rhyne's alleged individual exposures. *Id.* at 17-39.

Oddly, after conceding that his methodology presents no way of identifying the actual benzene exposure from a given product, Dr. Herrick offered to "go back and – and recalculate and – and, you know, just estimate – just model only the contribution from the parts washing source, the near field where he was working, and not include the far field contribution." Exhibit "A", Herrick Dep. Tr. 344:25-345:6. In effect, Dr. Herrick testified that the benzene exposure numbers

in his report are incorrect and the only way for him to provide correct numbers would be to go back and run the ART model differently than he did for his report (despite the fact that his figures were provided to and relied upon by Plaintiffs' causation experts). *See id.* at 344:3-345:6. This admission is telling, and renders the entirety of his report unreliable; as such, Dr. Herrick's cumulative exposure numbers, which necessarily depend on the individual exposure calculations that he apparently needs to re-do, must necessarily also be unreliable. *See Castellow*, 97 F. Supp. 2d at 792 ("...if the 'data' from which his modeling assumptions arise is invalid, or non-existent, then there is no hope that his technique, much less his results, is going to be reliable.").

These failures by Dr. Herrick are not merely academic in nature – the number, variety, and significance of Dr. Herrick's errors meaningfully impact the calculations Dr. Herrick would theoretically present to the jury. By way of example:

- Dr. Herrick's improper application of the ART model for individual exposure analysis, plus his incorrect assumption of a 58 ppm benzene content for 105 Solvent, and using benzene as the agent instead of mineral spirits (even though 105 Solvent is incontestably a mineral spirit) demonstrates, for modeling 60 minutes of parts-washing using mineral spirits, a 50th percentile exposure of 7.1mg/m³ (2.23 ppm). Exhibit "B", Herrick Report at p. 27.
- By comparison, in the Fedoruk (2003) study relied on by Dr. Herrick, *actual* air sampling of 60 minutes of parts-washing using mineral spirits spiked to 58 ppm benzene resulted in a personal breathing zone concentration of just 0.44 ppm. Exhibit "J", Fedoruk, *supra*, at 769 (expressed as 440 parts per billion, equaling 0.44 ppm, in "Table II").

In other words, Dr. Herrick's incorrect use of the ART model, combined with his misapplication of the model's design, combined with his inaccurate data resulted in an overestimated exposure by a factor of five ($0.44 \times 5.07 = 2.23$). This error simply added to the other errors identified throughout this brief that comprised Dr. Herrick's cumulative exposure opinions.

CONCLUSION

For the foregoing reasons, and those reasons stated by other defendants in their respective motion to exclude, Savogran hereby submits that Dr. Herrick's opinions should be excluded from evidence pursuant to Federal Rule of Evidence 702 and *Daubert*.

Respectfully submitted, this 7th day of April, 2020.

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CERTIFICATE OF SERVICE

I hereby certify that on this day, April 7, 2020, I filed the foregoing **THE SAVOGRAN COMPANY'S MEMORANDUM OF LAW IN SUPPORT OF MOTION TO EXCLUDE THE TESTIMONY, OPINIONS AND REPORT OF PLAINTIFFS' EXPERT DR. ROBERT HERRICK** with the Court using the CM/ECF system, which will serve all counsel of record.

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